

Purpose Designed to identify individuals at high risk for sleep apnea, the short survey (11 questions) focuses on three categories of apnea signs and symptoms: snoring, daytime sleepiness, and obesity/high blood pressure. The instrument may be indicated for use in both research, and as a screening tool for clinicians hoping to quickly establish apnea risk factors in their patients.

Population for Testing Validated in patients 18 years old and over.

Administration Questions are self-reported in a paper-and-pencil format: Administration should require about 5–10 min, though possibly longer as blood pressure may need to be taken and recent weight and height measurements are necessary for the calculation of body mass index. For a similar measure, see the STOP-Bang (Chap. 91).

Reliability and Validity A number of studies have examined the psychometric properties of the instrument, and findings suggest that the kind of patient population being examined has some bearing on the sensitivity and efficacy of the measure. Though Chung and colleagues [1] found the tool to be moderately sensitive in a surgical patient population, a second study examining patients at a sleep clinic [2] discovered a sensitivity of only

62%, making it unlikely to benefit clinicians during diagnosis. In almost all of the literature, the tool appears to be more valuable when apnea is moderate or severe.

Obtaining a Copy A number of adapted versions are available without copyright. See the original article [3] and that published by Chung and colleagues [1].

Scoring As the scoring process tends to be rather complex in comparison to other apnea scales, the instrument is often recommended for use by sleep specialists or individuals with similarly relevant training. The survey evaluates “yes or no” responses and multiple-choice selections, and includes space for calculating Body Mass Index (BMI) based on respondent measurements. Points are given to responses that indicate more acute symptoms. For “yes or no” questions, one point is given to an answer of “yes.” In the case of multiple-choice questions, the two answers that correspond with the highest severity of apnea both receive one point. Categories one and two are considered high risk if the individual receives two or more points. Category three questions (obesity and blood pressure). The respondent is considered high risk when blood pressure is found to be high or when BMI is greater than 30 kg/m².

BERLIN QUESTIONNAIRE

Height (m) _____ Weight (kg) _____ Age _____ Male / Female

Please choose the correct response to each question.

CATEGORY 1**1. Do you snore?**

- ☐ a. Yes
☐ b. No
☐ c. Don't know

*If you snore:***2. Your snoring is:**

- ☐ a. Slightly louder than breathing
☐ b. As loud as talking
☐ c. Louder than talking
☐ d. Very loud – can be heard in adjacent rooms

3. How often do you snore

- ☐ a. Nearly every day
☐ b. 3-4 times a week
☐ c. 1-2 times a week
☐ d. 1-2 times a month
☐ e. Never or nearly never

4. Has your snoring ever bothered other people?

- ☐ a. Yes
☐ b. No
☐ c. Don't Know

5. Has anyone noticed that you quit breathing during your sleep?

- ☐ a. Nearly every day
☐ b. 3-4 times a week
☐ c. 1-2 times a week
☐ d. 1-2 times a month
☐ e. Never or nearly never

CATEGORY 2**6. How often do you feel tired or fatigued after you sleep?**

- ☐ a. Nearly every day
☐ b. 3-4 times a week
☐ c. 1-2 times a week
☐ d. 1-2 times a month
☐ e. Never or nearly never

7. During your waking time, do you feel tired, fatigued or not up to par?

- ☐ a. Nearly every day
☐ b. 3-4 times a week
☐ c. 1-2 times a week
☐ d. 1-2 times a month
☐ e. Never or nearly never

8. Have you ever nodded off or fallen asleep while driving a vehicle?

- ☐ a. Yes
☐ b. No

*If yes:***9. How often does this occur?**

- ☐ a. Nearly every day
☐ b. 3-4 times a week
☐ c. 1-2 times a week
☐ d. 1-2 times a month
☐ e. Never or nearly never

CATEGORY 3**10. Do you have high blood pressure?**

- ☐ Yes
☐ No
☐ Don't know

Please mark "X" as appropriate:

	Almost Daily	Often	Rarely	Not at all
Do you typically awaken with a dry mouth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you typically awaken with a sore throat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you drool on your pillow during the night?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Men:</i> Do you have problems with penile erections (i.e. impotence)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you frequently awaken during the night to void urine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you experience frequent heartburn or reflux during the night?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you wake up with headaches in the morning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you ever have a fractured jaw, broken nose or oral problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever done heavy exercise or manual labour?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

References

1. Chung, F., Yegneswaran, B., Liao, P., Chung, S. A., Vairavanathan, S., Islam, S., Khajehdehi, A., Shapiro, C. (2008). Validation of the Berlin questionnaire and American Society of Anesthesiologists checklist as screening tools for obstructive sleep apnea in surgical patients. *Anesthesiology*, 108(5), 822–830.
2. Ahmadi, N., Chung, S. A., Gibbs, A., & Shapiro, C. (2008). The Berlin questionnaire for sleep apnea in a sleep clinic population: relationship to polysomnographic measurement of respiratory disturbance. *Sleep and Breathing*, 12(1), 39–45.
3. Netzer NC, Stoohs RA, Netzer CM, Clark K, Strohl KP (1999). Using the Berlin Questionnaire to identify patients at risk for the sleep apnea syndrome. *Ann Intern Med*, 131(7):485–491.

Representative Studies Using Scale

- Chung, F., Ward, B., Ho, J., Yuan, H., Kayumov, L., & Shapiro, C. (2007). Preoperative identification of sleep apnea risk in elective surgical patients, using the Berlin questionnaire. *Journal of Clinical Anesthesia*, 19(2), 130–134.
- Hiestand, D. M., Britz, P., Goldman, M., & Phillips, B. (2006). Prevalence of symptoms of obstructive sleep apnea in the US population: results from the National Sleep Foundation sleep in America 2005 poll. *Chest*, 130(3), 780–786.